

APPENDIX C

ESTIMATING THE BURDEN HOURS

Appendix C. Estimating the Burden Hours

Under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), Federal Agencies are required to estimate the reporting burden that would be imposed by a proposed rule. In this context, the term “burden” means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

In this analysis, burden hours are the sum of the laboratory hours spent generating the test results and the administrative hours spent by the manufacturers of the chemicals to arrange for, monitor, and report the test results. Laboratory hours were estimated as part of the estimate of laboratory testing costs and were summarized in Appendix B.

Several assumptions were made in estimating the administrative hours. As described in this report, it is assumed that administrative costs were equivalent to approximately 25% of the laboratory costs. Second, all administrative costs are assumed to be labor. This assumption results in an overestimate of the number of burden hours because some administrative costs would cover such items as travel costs to visit the laboratories. Since it is not known how large this non-labor portion is, but it is likely to be relatively small, the conservative assumption is made that all costs are labor. Administrative hours are composed of managerial, clerical and technical labor. Based on the types of activities covered (e.g. soliciting bids, selecting laboratories, preparing test protocols, monitoring tests in progress, developing cost sharing agreements, preparing reports to EPA on the testing, and auditing the laboratories), the analysis assumes that the hours are composed of 20 percent managerial, 60 percent technical, and 20 percent clerical. Based on these assumptions, the number of administrative burden hours was calculated by dividing the total administrative costs by the weighted hourly administrative wage rate.

Specifically, the weighted average hourly administrative wage rate was calculated using 1993 estimates of the hourly wage rates for administrative labor.¹ These estimates were calculated using first quarter 1995 dollars which were updated to first quarter 1997 dollars, as shown in Table C-1 (based on the Bureau of Labor Statistics Employment Cost Index, private industry workers, white-collar occupations). The 1997 estimates for each category of administrative hours (i.e., managerial, clerical, technical) were then multiplied by the respective proportion of total hours that they represented (20%, 20%, 60%) to obtain a weighted hourly wage estimate for administrative labor of \$59.09. As stated above, the total administrative cost estimate was then divided by this weighted hourly rate to obtain administrative labor burden hours.

¹ U.S. Department of Labor, Bureau of Labor Statistics. Employment Cost Index, Historical Listing. U. S. Department of Labor, Washington, D.C., July 25, 1995.

| Table C-1 | | | |
|--|-------------|-------------|--------------------------|
| | 1995 | 1997 | Relative Weighted |
| Managerial | \$77.61 | \$83.03 | 20% |
| Technical | 58.29 | 62.36 | 60% |
| Clerical | 23.65 | 25.30 | 20% |
| Administrative Weighted Hourly Wages = | | | \$59.09 |

The estimated burden hours for each test guideline are presented in Table C-2. The total burden ranges from 73 hours for E. Coli mutation to 13,974 hours for carcinogenicity .

| Table C-2. Burden Hours by TSCA Test Guideline | | | | |
|---|-------------------------------|---------------------|-----------------------------|--------------|
| Test Description | TSCA 799 Guideline | Burden Hours | | |
| | | Laboratory | Admini- stration | Total |
| Acute Inhalation Toxicity with Acute Modification | 799.9135 with (ASTM E 981-84) | 806 | 296 | 1,102 |
| Neurotoxicity Screen | 799.9620 | 2,312 | 1,147 | 3,459 |
| Subchronic with Modification | 799.9346 | 2,950 | 1,390 | 4,340 |
| Developmental | 799.9370 | 2,547 | 948 | 3,495 |
| Reproductive | 799.9380 | 5,024 | 2,396 | 7,420 |
| Carcinogenicity | 799.9420 | 10,742 | 3,232 | 13,974 |
| Immunotoxicity | 799.9780 | 415 | 309 | 724 |
| In Vivo Bone Marrow | 799.9538 | 394 | 162 | 556 |
| In Vivo Erythrocyte | 799.9539 | 147 | 59 | 206 |
| Mutation Somatic Cell Culture | 799.9530 | 144 | 68 | 212 |
| E. Coli - Mutation | 799.9510 | 48 | 25 | 73 |

The estimated hours for each chemical are presented in Table C-3. Using the per-test estimates in Table C-2, each chemical has been assigned the burden hours for each test applicable to it and its total burden hours. The burden hours range from 1,102 for Hydrochloric Acid and Chlorine to 35,560 for Carbonyl Sulfide. The total burden hours are 338,635; the average per chemical is 14,723 (based on a count of 23 chemicals).

**Table C-3. Burden Hours for Chemical-Specific Toxicology Tests
Required in Amended HAPs Proposal**

| Chemical Name and CAS # | | Test Description | Burden Hours | | |
|-------------------------|------------------------|--|---------------|----------------|---------------|
| | | | Laboratory | Administration | Total |
| 79-00-5 | 1,1,2-Trichloroethane | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Carcinogenicity | 10,742 | 3,232 | 13,974 |
| | | In Vivo Bone Marrow | 394 | 162 | 556 |
| | | In Vivo Erythrocyte | 147 | 59 | 206 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 25,336 | 9,939 | 35,275 |
| 120-82-1 | 1,2,4-Trichlorobenzene | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,080 | 2,700 | 8,780 |
| 92-52-4 | 1,1'-Biphenyl | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 14,054 | 6,486 | 20,540 |
| 463-58-1 | Carbonyl Sulfide | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Carcinogenicity | 10,742 | 3,232 | 13,974 |
| | | E. Coli Mutation | 48 | 25 | 73 |
| | | Mutation-Somatic Cell Culture | 144 | 68 | 212 |
| | | In Vivo Bone Marrow | 394 | 162 | 556 |
| | | In Vivo Erythrocyte | 147 | 59 | 206 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 25,528 | 10,032 | 35,560 |
| 7782-50-5 | Chlorine | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Total | 806 | 296 | 1,102 |
| 108-90-7 | Chlorobenzene | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,483 | 3,142 | 9,625 |

**Table C-3. Burden Hours for Chemical-Specific Toxicology Tests
Required in Amended HAPs Proposal**

| Chemical Name and CAS # | | Test Description | Burden Hours | | |
|-------------------------|------------------------|--|---------------|----------------|---------------|
| | | | Laboratory | Administration | Total |
| 126-99-8 | Chloroprene | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 8,557 | 4,148 | 12,705 |
| 95-48-7 | Cresol ortho-isomer | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,483 | 3,142 | 9,625 |
| 106-44-5 | Cresol para-isomer | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,483 | 3,142 | 9,625 |
| 108-39-4 | Cresol Meta-isomer | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,483 | 3,142 | 9,625 |
| 111-42-2 | Diethanolamine | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 14,054 | 6,486 | 20,540 |
| 100-41-4 | Ethylbenzene | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 11,104 | 5,096 | 16,200 |
| 107-06-2 | Ethylene Dichloride | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Total | 13,639 | 6,177 | 19,816 |
| 107-21-1 | Ethylene Glycol | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,483 | 3,142 | 9,625 |
| 7647-01-0 | Hydrochloric Acid | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Total | 806 | 296 | 1,102 |

| Table C-3. Burden Hours for Chemical-Specific Toxicology Tests Required in Amended HAPs Proposal | | | | | |
|---|------------------------|--|----------------|----------------|----------------|
| Chemical Name and CAS # | | Test Description | Burden Hours | | |
| | | | Laboratory | Administration | Total |
| 7664-39-3 | Hydrogen Fluoride | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 14,054 | 6,486 | 20,540 |
| 108-31-6 | Maleic Anhydride | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Carcinogenicity | 10,742 | 3,232 | 13,974 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 16,822 | 5,933 | 22,755 |
| 108-10-1 | Methyl Isobutyl Ketone | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,245 | 3,002 | 9,247 |
| 80-62-6 | Methyl Methacrylate | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 11,104 | 5,096 | 16,200 |
| 91-20-3 | Naphthalene | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 6,245 | 3,002 | 9,247 |
| 108-95-2 | Phenol | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 1,221 | 606 | 1,827 |
| 85-44-9 | Phthalic Anhydride | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Subchronic | 2,950 | 1,390 | 4,340 |
| | | Developmental | 2,547 | 948 | 3,495 |
| | | Reproductive | 5,024 | 2,396 | 7,420 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Carcinogenicity | 10,742 | 3,232 | 13,974 |
| | | Immunotoxicity | 415 | 309 | 724 |
| | | Total | 24,795 | 9,718 | 34,513 |
| 75-35-4 | Vinylidene Chloride | Acute Inhalation Toxicity & Modification | 806 | 296 | 1,102 |
| | | Neurotoxicity Screen | 2,312 | 1,147 | 3,459 |
| | | Total | 3,118 | 1,443 | 4,561 |
| | | Total | 235,983 | 102,652 | 338,635 |